CLAIMS

We claim:

1. A system for transmitting digital image signals from a client device to a server device, comprising:

    establishing a connection between one or more client devices and server device;

    optionally making a copy of the image to free up system resources on the client;

    placing a copy of the image in a client queue if the image cannot be transmitted immediately;

    measuring the client resource availability of local resources and available processor time and maintaining historical information and trends;

    measuring the status and performance of the network connecting the client device and server device, and maintaining historical information and trends;

    increasing the size of the client queue if it becomes full;

    reducing the size of images to conserve storage space in the queue or to reduce transmission time between the client and server;

    transferring the image from the client device to the server device as a digital signal;

    persisting the image on the server device until it is processed or saved.

2. A system according to claim 1, wherein the step of increasing the size of the client queue includes an upper limit to prevent the queue from growing beyond a specified size.

3. A system according to claim **1**, wherein the step of transferring the signal from the client to the server can include encrypting the information on the client prior to transmission and decrypting the data once it is received by the server.

4. A system according to claim **1**, wherein the step of transferring the image signal from the client to the server can comprise:

   transmitting image data from one or more clients to a gateway server, such that the clients consider the gateway server to be a server;

   buffering the image data on the gateway server;

   transmitting image data from the gateway server to the server, such that the server considers the gateway server to be a client.

5. A system according to claim **1**, wherein the step of reducing the size of an image comprises:

   selecting one or more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods;

   reducing the current image, or any image in the queue when the queue becomes full;

   periodically reducing the size of the images in the queue, using reduction methods when processor resources are available.

6. A system according to claim **5**, wherein the step of selecting one of more reduction methods comprises:

estimating the reduction in image size possible for a specific reduction method;

estimating the cost of this reduction where the cost includes the resources required for reduction as well as the time to reduce the image;

performing the reduction if the cost is allowable and the reduction is considered meaningful;

evaluating other reduction methods if the desired amount of reduction has not been achieved.

7. A system according to claim **6**, wherein the step of determining if the cost is allowable comprises:

checking the current system resources to see if sufficient resources and time are available to reduce the image;

checking historical system resources and trends to estimate future resource availability;

checking the current network parameters such as available bandwidth and throughput;

checking historical network conditions and trends to estimate future network conditions.

8. A system according to claim **1**, wherein the step of transferring the image signal from the client device to the server device comprises:

storing the received image in a server queue or on a networked file system;

increasing the size of the server queue if it becomes full;

reducing the size of images to conserve storage space in the queue or to reduce storage requirements in the image database.

9. A system according to claim **8,** wherein the step of increasing the size of the server queue includes an upper limit to prevent the queue from growing beyond a specified size.

10. A system according to claim **8,** wherein the step of reducing the size of an image comprises:

selecting one or more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods;

reducing the current image, or any image in the queue when the queue nears or becomes full;

periodically reducing the size of the images in the queue, using lossless compression methods when processor resources are available.

11. A system according to claim **10,** wherein the step of selecting one of more reduction methods comprises:

estimating the reduction in image size possible for a specific reduction method;

estimating the cost of this reduction where the cost includes the resources required for reduction as well as the time to reduce the image;

performing the reduction if the cost is allowable and the reduction is considered meaningful;

evaluating other reduction methods if the desired amount of reduction has not been achieved.

12. A system for transmitting digital image signals from a client device to a server device, comprising:

establishing a connection between one or more client devices and server device;

optionally making a copy of the image to free up system resources on the client;

dividing the available network bandwidth between the client and server into one or more pieces and assigning certain images to be transmitted using these reserved channels;

placing a copy of the image in a client queue if the image cannot be transmitted immediately;

measuring the client resource availability of local processor resources and available processor time, and maintaining historical information and trends;

measuring the status and performance of the network connecting the client device and server device, and maintaining historical information and trends;

increasing the size of the client queue if it becomes full;

reducing the size of images to conserve storage space in the queue or reduce transmission time between the client and server;

transferring the image from the client device to the server device;

persisting the image on the server device until it is processed or saved.

13. A system according to claim 12, wherein the step of reserving network bandwidth comprising:

specifying the mapping of image type to a reserved piece of network bandwidth;

using any remaining, unreserved network bandwidth for images that do not have any

defined mapping;

allocating a separate queue for each piece of network bandwidth or allocating

elements from a single queue;

identifying the type of image and routing this image to the appropriate piece of

network bandwidth or queue;